



# MAS BULLETIN

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## Underwater Scaffolding

**Background.** The French firm DEVCO Ingenierie has developed an underwater scaffolding system for working divers that attaches to the sides or bottoms of ships by dynamic suction cups. Potential benefits include improved diver efficiency, reduced bottom time, and increased safety.

**Description.** The scaffolding is assembled out of composite pipes and gratings connected with anodized aluminum fittings. Other than the material, it appears very similar to the widely used aluminum scaffolding. The unique feature is the patented "DEVCO-SUB Underwater Dynamic Suction (sic) Clamp," four of which are used to anchor the scaffold to a ship's hull. The clamps use integral 24-vdc electric pumps to continuously evacuate the suction cup area. The clamps are claimed to work on all kinds of material, including uncoated concrete and timber, provided that the surface has been given a superficial hand brushing to remove marine growth and provided that no major cracks or grooves transect the cup's seal. A standard 5x5x6-foot scaffold can be completely assembled from the storage box and installed under a ship by two divers in 40 minutes. Power is supplied from a topside-ac to 24-vdc power supply. Automatic switching to emergency batteries provides secure clamping for 1 hour in the event of a loss of ac power. In addition to anchoring scaffolding, the clamps may be used singly or in combination for other purposes, including providing a handhold for individual divers or mounting on Remotely Operated Vehicles (ROV).

### Specifications.

#### Underwater Scaffolding System (typical setup)

- 4 DEVCO-SUB Dynamic Clamps (with 0-30 degree articulated joints)
- 23 Composite pipes
- 30 Anodized aluminum couplings
- 6 Composite gratings
- 24-vdc power supply with battery backup, cabling, ropes, service tools, repair kit, storage box.

Mass ..... 265 lbm  
Weight in water ..... 132 lb  
Overall size ..... 5.2 x 5.2 x 5.9 ft  
Load (horizontal clamping) ..... 400 lb \*  
Load (vertical clamping) ..... 485 lb \*

#### DEVCO-SUB Dynamic Suction Clamp

Mass ..... 13 lbm  
Weight in water ..... 6 lb  
Height ..... 10 in  
Diameter ..... 15 in  
Axial resistance ..... 440 lb \*  
Radial resistance ..... 220 lb \*  
Rated depth (standard model) ..... 984 ft sw

\* - depends upon surface condition

Other sizes/shapes/specifications available on request.

For further information, contact the manufacturer: Devco Ingenierie, 25 Avenue de la Violette, 13100 Aix-en-Provence, France, Phone: (33) 42.96.26.96, FAX: (33) 42.21.61.16

ONREUR point of contact: CDR John A. Sampson, Undersea Warfare Systems Technology, Phone: (44) 71-409-4260, FAX: (44) 71-724-7030

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